

CLAIMS

1. A communication handover method, which is conducted when,
in a communication system where a first access router
5 pertaining to a first subnet and a second access router
pertaining to a second subnet different from said first subnet
are connected through an IP network, a mobile terminal
connected through a radio communication to said first subnet
makes connection switching from said first subnet to said
10 second subnet, comprising:

a step in which said mobile terminal configures address
information adaptable to said second subnet in a state
connected to said first subnet;

a step in which said mobile terminal transmits an FBU
15 message including said address information to said first access
router;

a step in which said first access router transmits, to
both said mobile terminal and said second access router, an
FBAck message for making a notification to the effect that
20 said address information is valid;

a step in which said second access router stores
information on said FBAck message received from said first
access router;

a step in which said first access router starts to forward
25 a packet, addressed to said mobile terminal, to said second

access router along with the transmission of said FBAck message;

5 a step in which said second access router buffers said packet addressed to said mobile terminal and received from said first access router;

a step in which said mobile terminal carries out L2 handover for making connection switching from said first subnet to said second subnet without receiving said FBAck message from said first access router and transmits an FNA message including said FBU message to said second access router;

10 a step in which said second access router confirms the validity of said address information included in said FNA message;

a step in which said second access router makes a collation between said FBU message included in said FNA message and information on said FBAck message received from said first access router and stored; and

15 a step in which, when the information on said FBAck message corresponding to said FBU message included in said FNA message exists, said second access router forwards said packet, received from said first access router and buffered, to said mobile terminal.

2. The communication handover method according to claim 1,
25 comprising:

a step in which said first access router transmits an HI message including said address information to said second access router after receiving said FBU message from said mobile terminal; and

5 a step in which said second access router confirms the validity of said address information included in said HI message and then transmits, to said first access router, an HAck message for making a notification to the effect that said address information is valid.

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3. A communication handover method, which is conducted when, in a communication system where a first access router pertaining to a first subnet and a second access router pertaining to a second subnet different from said first subnet are connected through an IP network, a mobile terminal connected through a radio communication to said first subnet makes connection switching from said first subnet to said second subnet, comprising:

15 a step in which said mobile terminal configures address information adaptable to said second subnet in a state connected to said first subnet;

20 a step in which said mobile terminal transmits an FBU message including said address information to said first access router;

25 a step in which said first access router receives said

FBU message from said mobile terminal and then transmits an HI message including said address information to said second access router;

5 a step in which said second access router confirms the validity of said address information included in said HI message and then transmits, to said first access router, an HAcK message for making a notification to the effect that said address information is valid;

10 a step in which said first access router transmits, to both said mobile terminal and said second access router, an FBacK message for making a notification to the effect that said address information is valid;

15 a step in which said second access router stores information on said FBacK message for making a notification to the effect that said address information received from said first access router is valid;

20 a step in which said first access router starts to forward a packet, addressed to said mobile terminal, to said second access router along with the transmission of said FBacK message;

a step in which said second access router buffers said packet addressed to said mobile terminal and received from said first access router;

25 a step in which said mobile terminal carries out L2 handover for making connection switching from said first subnet

to said second subnet without receiving said FBACk message from said first access router and transmits an FNA message including said FBU message to said second access router;

5 a step in which said second access router makes a collation between said FBU message included in said FNA message and the information on said FBACk message received from said first access router and stored; and

a step in which, when the information on said FBACk message corresponding to said FBU message included in said FNA message exists, said second access router transmits said packet, 10 received from said first access router and buffered, to said mobile terminal.

4. A communication handover method, which is conducted when, 15 in a communication system where a first access router pertaining to a first subnet and a second access router pertaining to a second subnet different from said first subnet are connected through an IP network, a mobile terminal connected through a radio communication to said first subnet 20 makes connection switching from said first subnet to said subnet, comprising:

a step in which said mobile terminal configures address information adaptable to said second subnet in a state connected to said first subnet;

25 a step in which said mobile terminal transmits an FBU

message including said address information to said first access router;

5 a step in which said first access router receives said FBU message from said mobile terminal and then transmits an HI message including said address information to said second access router;

10 a step in which said second access router confirms the validity of said address information included in said HI message and then transmits, to said first access router, an HAck message for making a notification to the effect that said address information is valid;

15 a step in which said first access router transmits, to both said mobile terminal and said second access router, an FBAck message for making a notification to the effect that said address information is valid;

a step in which said second access router stores information on said FBAck message received from said first access router together with information indicative of whether or not said address information is valid;

20 a step in which said first access router starts to forward a packet, addressed to said mobile terminal, to said second access router along with the transmission of said FBAck message;

25 a step in which said second access router buffers said packet addressed to said mobile terminal and received from

said first access router;

a step in which said mobile terminal carries out L2
handover for making connection switching from said first subnet
to said second subnet without receiving said FBAck message
5 from said first access router and transmits an FNA message
including said FBU message to said second access router;

a step in which said second access router makes a collation
between said FBU message included in said FNA message and the
information on said FBAck message received from said first
10 access router and stored; and

a step in which, when the information on said FBAck message
corresponding to said FBU message included in said FNA message
exists and the information indicative of said address
information being valid is stored in conjunction with the
15 information on said FBAck message, said second access router
transmits said packet, received from said first access router
and buffered, to said mobile terminal.

5. The communication handover method according to any one
20 of claims 1 to 4, wherein information on a pair of transmitting
side address and transmitted side address, specified at a
header of said FBAck message, is used as the information on
said FBAck message.

25 6. The communication handover method according to any one

of claims 1 to 4, comprising a step in which said second access router deletes the information on said FBAck message collated with said FBU message included in said FNA message.

5 7. A communication system in which a first access router pertaining to a first subnet and a second access router pertaining to a second subnet different from said first subnet are connected through an IP network and a mobile terminal makes a connection with said first subnet or said second subnet
10 through a radio communication,

 wherein said mobile terminal configures address information adaptable to said second subnet in a state connected to said first subnet,

 said mobile terminal transmits an FBU message including
15 said address information to said first access router,

 said first access router transmits, to both said mobile terminal and said second access router, an FBAck message for making a notification to the effect that said address information is valid,

20 said second access router stores information on said FBAck message received from said first access router,

 said first access router starts to forward a packet, addressed to said mobile terminal, to said second access router along with the transmission of said FBAck message,

25 said second access router buffers said packet addressed

to said mobile terminal and received from said first access router,

said mobile terminal carries out L2 handover for making connection switching from said first subnet to said second subnet without receiving said FBAck message from said first access router and transmits an FNA message including said FBU message to said second access router,

said second access router confirms the validity of said address information included in said FNA message,

10 said second access router makes a collation between said FBU message included in said FNA message and the information on said FBAck message received from said first access router and stored, and

15 when the information on said FBAck message corresponding to said FBU message included in said FNA message exists, said second access router transmits said packet, received from said first access router and buffered, to said mobile terminal.

8. The communication system according to claim 7, wherein
20 said first access router transmits an HI message including said address information to said second access router after receiving said FBU message from said mobile terminal, and
 said second access router confirms the validity of said address information included in said HI message and then
25 transmits, to said first access router, an HAck message for

making a notification to the effect that said address information is valid.

9. A communication system in which a first access router
5 pertaining to a first subnet and a second access router
pertaining to a second subnet different from said first subnet
are connected through an IP network and a mobile terminal makes
a connection with said first subnet or said second subnet
through a radio communication,

10 wherein said mobile terminal configures address
information adaptable to said second subnet in a state
connected to said first subnet,

said mobile terminal transmits an FBU message including
said address information to said first access router,

15 said first access router receives said FBU message from
said mobile terminal and then transmits an HI message including
said address information to said second access router,

said second access router confirms the validity of said
address information included in said HI message and then
20 transmits, to said first access router, an HAcK message for
making a notification to the effect that said address
information is valid,

said first access router transmits, to both said mobile
terminal and said second access router, an FBAcK message for
25 making a notification to the effect that said address

information is valid,

5 said second access router stores information on said FBACk message for making a notification to the effect that said address information received from said first access router is valid,

 said first access router starts to forward a packet, addressed to said mobile terminal, to said second access router along with the transmission of said FBACk message,

10 said second access router buffers said packet addressed to said mobile terminal and received from said first access router,

 said mobile terminal carries out L2 handover for making connection switching from said first subnet to said second subnet without receiving said FBACk message from said first access router and transmits an FNA message including said FBU message to said second access router,

20 said second access router makes a collation between said FBU message included in said FNA message and the information on said FBACk message received from said first access router and stored, and

 when the information on said FBACk message corresponding to said FBU message included in said FNA message exists, said second access router transmits said packet, received from said first access router and buffered, to said mobile terminal.

10. A communication system in which a first access router
pertaining to a first subnet and a second access router
pertaining to a second subnet different from said first subnet
are connected through an IP network and a mobile terminal makes
5 a connection with said first subnet or said second subnet
through a radio communication,

wherein said mobile terminal configures address
information adaptable to said second subnet in a state
connected to said first subnet,

10 said mobile terminal transmits an FBU message including
said address information to said first access router,

said first access router receives said FBU message from
said mobile terminal and then transmits an HI message including
said address information to said second access router,

15 said second access router confirms the validity of said
address information included in said HI message and then
transmits, to said first access router, an HAck message for
making a notification to the effect that said address
information is valid,

20 said first access router transmits, to both said mobile
terminal and said second access router, an FBAck message for
making a notification to the effect that said address
information is valid,

said second access router stores information on said FBAck
25 message received from said first access router together with

information indicative of whether or not said address information is valid,

5 said first access router starts to forward a packet, addressed to said mobile terminal, to said second access router along with the transmission of said FBack message,

 said second access router buffers said packet addressed to said mobile terminal and received from said first access router,

10 said mobile terminal carries out L2 handover for making connection switching from said first subnet to said second subnet without receiving said FBack message from said first access router and transmits an FNA message including said FBU message to said second access router,

15 said second access router makes a collation between said FBU message included in said FNA message and the information on said FBack message received from the said access router and stored, and

20 when the information on said FBack message corresponding to said FBU message included in said FNA message exists and the information indicative of said address information being valid is stored in conjunction with the information on said FBack message, said second access router transmits said packet, received from said first access router and buffered, to said mobile terminal.

11. The communication system according to any one of claims
7 to 10, wherein information on a pair of transmitting side
address and transmitted side address, specified at a header
of said FBack message, is used as the information on said FBack
5 message.

12. The communication system according to any one of claims
7 to 10, wherein said second access router deletes the
information on said FBack message collated with said FBU
10 message included in said FNA message.

13. A communication message processing method, which is
conducted in a second access router when, in a communication
system where a first access router pertaining to a first subnet
15 and said second access router pertaining to a second subnet
different from said first subnet are connected through an IP
network, a mobile terminal connected through a radio
communication to said first subnet makes connection switching
from said first subnet to said second subnet, comprising:
20 a step of receiving, from said first access router, an
FBack message which is a response message to an FBU message
including address information configured by said mobile
terminal and adaptable to said second subnet;

a step of storing information on said FBack message
25 received from said first access router;

a step of buffering a packet addressed to said mobile terminal and sent by packet forwarding to said mobile terminal which is started along with transmission of said FBAck message;

5 a step of receiving an FNA message including said FBU message from said mobile terminal which carries out L2 handover for connection switching from said first subnet to said second subnet;

a step of confirming the validity of said address
10 information in said FBU message included in said FNA message;

a step of making a collation between said FBU message included in said FNA message and the information on said FBAck message received from said first access router and stored; and

15 a step of, when the information on said FBAck message corresponding to said FBU message included in said FNA message exists, transmitting said packet, received from said first access router and buffered, to said mobile terminal.

20 14. The communication message processing method according to claim 13, comprising:

a step of receiving an HI message including said address information from said first access router; and

a step of confirming the validity of said address
25 information included in said HI message and then transmitting,

to said first access router, an HAck for making a notification to the effect that said address information is valid.

15. A communication message processing method, which is
- 5 conducted in a second access router when, in a communication system where a first access router pertaining to a first subnet and said second access router pertaining to a second subnet different from said first subnet are connected through an IP network, a mobile terminal connected through a radio
- 10 communication to said first subnet makes connection switching from said first subnet to said second subnet, comprising:
- a step of receiving, from said first access router, an HI message including address information configured by said mobile terminal and adaptable to said second subnet;
 - 15 a step of confirming the validity of said address information included in said HI message and then transmitting, to said first access router, an HAck message for making a notification to the effect that said address information is valid;
 - 20 a step of receiving, from said first access router, an FBAck message which is a response to said FBU message;
 - a step of storing information on said FBAck message making a notification to the effect that said address information received from said first access router is valid;
 - 25 a step of buffering a packet addressed to said mobile

terminal and sent by said packet forwarding to said mobile terminal which is started along with transmission of said FBACk message;

5 a step of receiving an FNA message including said FBU message from said mobile terminal which carries out L2 handover for making connection switching from said first subnet to said second subnet;

10 a step of making a collation between said FBU message included in said FNA message and information on said FBACk message received from said first access router and stored; and

15 a step of, when the information on said FBACk message corresponding to said FBU message included in said FNA message exists, transmitting, to said mobile terminal, said packet received from said first access router and buffered.

16. A communication message processing method, which is conducted in a second access router when, in a communication system where a first access router pertaining to a first subnet and said second access router pertaining to a second subnet different from said first subnet are connected through an IP network, a mobile terminal connected through a radio communication to said first subnet makes connection switching from said first subnet to said second subnet, comprising:

25 a step of receiving, from said first access router, an

HI message including address information configured by said mobile terminal and adaptable to said second subnet;

5 a step of confirming the validity of said address information included in said HI message and then transmitting, to said first access router, an HAck message for making a notification to the effect that said address information is valid;

a step of receiving, from said first access router, an FBAck message which is a response to said FBU message;

10 a step of storing information on said FBAck message received from said first access router together with information indicative of whether or not said address information is valid;

a step in which said first access router starts forwarding
15 a packet, addressed to said mobile terminal, to said second access router along with transmission of said FBAck message;

a step in which said second access router buffers said packet addressed to said mobile terminal and received from said first access router;

20 a step of receiving an FNA message including said FBU message from said mobile terminal which carries out L2 handover for making connection switching from said first subnet to said second subnet;

a step of making a collation between said FBU message
25 included in said FNA message and information on said FBAck

message received from said first access router and stored;
and

a step of, when the information on said FBAck message
corresponding to said FBU message included in said FNA message
5 exists and information indicative of said address information
being valid is stored in conjunction with the information on
said FBAck message, transmitting, to said mobile terminal,
said packet received from said first access router and
buffered.

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17. The communication message processing method according
to any one of claims 13 to 16, wherein information on a pair
of transmitting side address and transmitted side address,
specified at a header of said FBAck message, is used as the
15 information on said FBAck message.

18. The communication message processing method according
to any one of claims 13 to 16, comprising a step of deleting
the information on said FBAck message collated with said FBU
20 message included in said FNA message.

19. A communication message processing program for
implementing said communication message processing method
according to any one of claims 13 to 16 through the use of
25 a computer.